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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/822,950

03/30/2001

Andrew J. Thurston

M-8342 US

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06/01/2006

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EXAMINER

GANDHI, DIPAKKUMAR B

ART UNIT

PAPER NUMBER

2138

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/822,950

Applicant(s)

THURSTON, ANDREW J.

Examiner

Dipakkumar Gandhi

Art Unit

2138

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 31-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Response to Amendment***

1. Applicant's request for reconsideration filed on 3/17/2006 has been reviewed.
2. Amendment filed on 3/17/2006 has been entered.
3. Applicant's arguments filed on 3/17/2006 have been fully considered but they are not persuasive.
4. The applicant contends, "The language of claim 1 makes it clear that no more than six equations are used to generate the minimum-degree polynomials."

The examiner disagrees and would like to mention that the claim 1 fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 does not describe the features of the invention. Hence the claim 1 is rejected under 35 U.S.C. 112, second paragraph as being indefinite.

5. As per claim 1, 13, 25, 38, 48, the applicant contends, "Kraft does not teach generating a plurality of minimum-degree polynomials based on no more than six equations having no more than two branch decisions."

The examiner disagrees and would like to point out that Kraft teaches that the binary tree of FIG. 2...code vector (fig. 1, 2, col. 6, lines 2-7, Kraft). Kraft also teaches that the control bits...FIG. 2 occurs (fig. 2, col. 6, lines 33-57, Kraft). Hence Kraft teaches generating a plurality of minimum-degree polynomials based on no more than six equations having no more than two branch decisions as mentioned in claim 1.

6. As per claims 9 and 38, the applicant contends, "The cited art fails to teach or suggest the specific set of six equations."

The examiner disagrees and would like to point out that Kraft teaches the method wherein said extracting step generates the error polynomial based on the following six equations:

$$(1) d_0 = S_1,$$

$$(2) d_1 = S_3 + S_1 S_2,$$

$$(3) \sigma^1(X) = 1 + S_1 X,$$

$$(4) \text{ if } (d_1 = 0) \text{ then } \sigma^2(X) = \sigma^1(X)$$

$$\text{else if } (d_0 = 0) \text{ then } \sigma^2(X) = q_0 \sigma^1(X) + d_1 X^3$$

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$$\text{else } \sigma^2(X) = q_0 \sigma^1(X) + d_1 X^2,$$

$$(5) d_2 = S_5 \sigma_0 + S_4 \sigma_1 + S_3 \sigma_2 + S_2 \sigma_3, \text{ and}$$

$$(6) \text{ if } (d_2 = 0) \text{ then } \sigma^3(X) = \sigma^2(X)$$

$$\text{else } \sigma^3(X) = q_1 \sigma^1(X) + d_1 X^3,$$

where  $S_i$  are the syndromes,  $\sigma^i$  are the minimum-degree polynomials,  $\sigma_i$  are four coefficients for  $\sigma^2(X)$ ,  $d_0$ - $d_2$  are correction factors,  $q_0$ - $q_1$  are additional correction factors,  $q_0$  is equal to  $d_0$  unless  $d_0$  is zero, when  $q_0$  is 1, and  $q_1$  is equal to  $d_1$  unless  $d_1$  is zero, when  $q_1 = q_0$  (fig. 1, 2, col. 1, lines 60-68, col. 6, lines 1-59, Kraft).

### ***Claim Rejections - 35 USC § 112***

7. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, "the extracting comprises generating a plurality of minimum-degree polynomials based on no more than six equations having no more than two branch decisions" does not describe the features of the invention.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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10. Claim 1-6, 9, 10, 11, 13, 14, 15, 17, 18, 24, 25, 26, 31, 32, 38, 39, 40, 42, 43, 44, 45, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) in view of Kraft (US 5,343,481). Please see the office action mailed on 12/14/2005 for details.
11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) and Kraft (US 5,343,481) as applied to claim 1 above, and further in view of Erhart et al. (US 5,051,999). Please see the office action mailed on 12/14/2005 for details.
12. Claims 8, 16, 19, 20, 21, 22, 23, 27, 28, 29, 33, 34, 35, 36, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) and Kraft (US 5,343,481) as applied to claim 1 above, and further in view of Stenerson (US 4,597,083). Please see the office action mailed on 12/14/2005 for details.
13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) and Kraft (US 5,343,481) as applied to claim 11 above, and further in view of Wicker (Error Control Systems for Digital Communication and Storage, 1995, Prentice-Hall, Inc.). Please see the office action mailed on 12/14/2005 for details.
14. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) and Kraft (US 5,343,481) as applied to claim 38 above, and further in view of Wolf (US 6,385,751 B1). Please see the office action mailed on 12/14/2005 for details.
15. Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (US 5,583,499) and Kraft (US 5,343,481) as applied to claim 38 above, and further in view of Maki et al. (US 4,873,688). Please see the office action mailed on 12/14/2005 for details.
16. Claims 48, 49, 50, 51, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alvarez et al. (US 2002/0165962 A1) in view of Kraft (US 5,343,481). Please see the office action mailed on 12/14/2005 for details.
17. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alvarez et al. (US 2002/0165962 A1) and Kraft (US 5,343,481) as applied to claim 48 above, and further in view of Wicker (Error Control Systems for Digital Communication and Storage, 1995, Prentice-Hall, Inc.). Please see the office action mailed on 12/14/2005 for details.

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***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dipakkumar Gandhi whose telephone number is 571-272-3822. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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